

## Teachers’ motivation to adopt technology in polytechnics in Haryana

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### Abstract

This purpose of this study is to assess the teachers’ motivation to adopt the technology as teaching method. To achieve the aim of the study, we collected the data from 320 teachers at Polytechnics in Haryana. We deployed exploratory factor analysis (EFA) to validate the internal consistency of the constructs. In addition, this study also used multiple regression analysis to examine the influence of teachers’ motivation on future behavioural intention to use technology as teaching method. Our findings suggest that internal self-efficacy, value beliefs, ease of use technology are important factors which motivates the teachers to use technology in the classroom teaching and online teaching. However, external self-concept does not influence the behavioural intention to use technology as teaching method.

**Keywords:** Motivation, polytechnics, teachers, ICT

### Introduction

As countries around the world put up their best fight against the pandemic COVID-19, the Information and Communication Technology (ICT) industry is playing a key role in this journey (The Mint, 2020) [18]. ICT is considered as a change agent in the formal education system, which helps in achieving the fundamental goals of education (Sharma and Srivastava, 2019) [15]. These goals are the acquisition, and understanding of the acquired knowledge and the skills, its retention, and ultimately applying the knowledge and the skills (Perkins, 1993) [11]. As a result of the explosion of ICT, the world is the classroom and the world exists in the classroom (Alazzam *et al.*, 2012) [2]. Students are easily connected to the rest of the world and information is easily accessible with a click of a mouse (Aluri and Tucker, 2015) [4]. Therefore, for teachers to effectively make use of ICT resources in the classroom, they must have easy access to various types of ICT resources (Alston *et al.*, 2013). In this study, we have investigated teachers’ motivation to adopt technology in polytechnics in Haryana. Hence, the rest of the study is organized as follows. Section 2 discusses the previous studies which examine the significance of ICT in the education sector. Section 3 deals with the research methodology. Section 4 shows the empirical results. Next, Section 5 concludes the findings of the study.

### Literature review

Last decades are witness of Interest in the use of ICT resources especially in technical (Alampay, 2006) [1]. The adoption of Information and Communication Technology (ICT) in education industry is subject to numerous elements, including the teachers’ motivation, the framework gave to the educators, preparing programs led to utilize innovation, their self-conviction and the social impact. Previous studies documented behavioural intention as predictors of use of the technology in the education industry (Schepers and Wetzels, 2007; Salleh and Albion, 2004; Venkatesh and Bala, 2008; Shiue, 2007) [14, 13, 19, 16]. In addition, large of number of studies provided that peer collaboration is essential components in the adoption of technology in the teaching methods (Baldwin, 1998; Sandholtz, 2001; Windschitl & Sahl, 2002) [6, 12, 20]. Further, vast literature showed that the integration of ICT in teaching among teachers may not be successful due to reasons, for instance, the lack of knowledge, lack of skills, lack of teaching experience, lack of ICT availability, lack of training, and lack of administration support (Lau & Sim, 2008; Tella *et al.*, 2007; Bebell, *et al.*, 2004) [10, 17, 7]. Furthermore, Anderson and Groulx (2015) [5] documented that the intrinsic factors related to the teachers’ are significant predictors of intentions to adopt and incorporate technology in the classrooms.

### Research Methodology

#### Target population, sampling and data collection

Target population of this article was teachers who teach in the Polytechnics and use the ICT resources as teaching methods. Therefore, these individuals are perfect target population assess the teachers’ motivation to adapt the technology as teaching tool. After selection of target population, it is required to select the target respondents. Hence, we choose the teachers at both government and private Polytechnics in the state of Haryana as target respondents. In order to collect the required data, we distributed 350 questionnaires using printed questionnaires

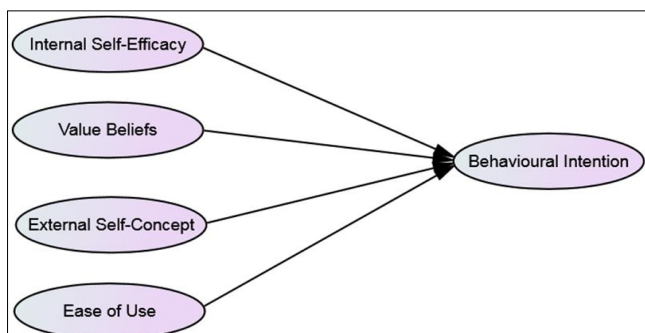


Fig 1: Proposed Research Model

as well as online questionnaire among target respondents. Of the 350, 320 questionnaires were returned by respondents and found fully suitable for further analysis.

**Measurement**

As, the purpose of this study was to assess the teachers’ motivation towards adoption of technology in teaching sector, therefore, we need to develop the measurement tool to collect the responses of the respondents. Four dimensions scale was adapted to measure teachers’ motivation to adopt technology in education sector as developed by Sharma and Srivastava (2019) [15]. In addition, behavioural intention scale was also measured using the scale developed by Sharma and Srivastava (2019) [15]. In addition, all responses of target respondents were recorded on five point Likert scale ranging from strongly disagree (1) to strongly agree (5).

**Statistical tests**

In the study, we deployed exploratory factor analysis (EFA) to validate the internal consistency of the variables corresponding to teachers’ motivation dimensions and behavioural intention. Furthermore, this study also used multiple regression analysis to assess the influence of teachers’ motivation on behavioural intention to use technology as teaching method.

**Results**

**Demographic profile of respondents**

Table 1 provides the teachers’ characteristics as respondents. As seen Table 1, majority of respondents was males (n=230; 71.88%) followed by females (n=230; 71.88%). Further, we found that 68.44% of survey teachers hold post-graduation degree followed by graduates and doctoral respondents, which implied that teachers at Polytechnics have higher qualification like PhD. Next, results provided that 60.94% (n=195) of survey teachers were lectures, followed by 25% senior lectures (n=80) and 14.06% head of department (n=45). Moreover, we found that 56.25% of respondents teach at government Polytechnics and 43.75% of respondents at private Polytechnics. In last, we found that majority of survey

teachers were very young and less than 25 years followed by 26-40 years age group, 51-60 years age group, 26-40 years age group, and 41-50 year age group.

**Table 1:** Sample descriptives

Demographics	Category	Frequency	Percentage
Gender	Male	230	71.88
	Female	90	28.13
Education Qualification	UG	65	20.31
	PG	219	68.44
	PhD	36	11.25
Nature of Polytechnic	Government Polytechnic	180	56.25
	Private Polytechnic	140	43.75
Designation	Lecturer	195	60.94
	Senior Lecturer	80	25.00
	HOD	45	14.06
Age	<25	130	40.63
	26-40	65	20.31
	41-50	45	14.06
	51-60	80	25.00

Notes: N=320

Source: Survey.

**Factor analysis**

According to recommendation of Kaiser (1974), KMO measure validates the adequacy of the sample for the proposed study. In addition, Kaiser (1974) suggested a KMO value > 0.9 is as best score and scores > 0.5 are acceptable; however, a value < 0.50 is unacceptable. As per the data analysis, the KMO is 0.822 and Bartlett’s test of sphericity is < 0.05. Thus, our sample size found to be suitable for deploying a factor analysis. Table 2 provides the results of factor analysis which was used to factor extraction using the principal component analysis (PCA) along with Varimax and Kaiser Normalization. The results of factor analysis shows that total six factors were extracted. Moreover, five factors were extracted corresponding to teachers’ motivation and one factor to behavioural intention using the Eigen value more than 1. Factor loadings corresponding to all items were more 0.775 which validates the internal consistency of the variables.

**Table 2:** Internal consistency

Dimensions	Code	Items	Factor loadings
Internal Self-Efficacy (ISE)	ISE1	I would feel comfortable using technology in my class on my own.	0.785
	ISE2	If I wanted to, I could easily operate any of the technological tools in my class on my own.	0.885
	ISE3	I would be able to operate any of the technological tools in my class even if there is no one to show me around.	0.789
	ISE4	For me being able to use technology on my own is important.	0.884
Value Beliefs (VB)	VB1	I believe that use of technology in teaching will help my students.	0.912
	VB2	I believe that technology integration will positively affect my students.	0.889
	VB3	I believe that use of technology will improve my teaching.	0.775
	VB4	I believe if I use technology in my teaching it will help me in my future growth.	0.885
	VB5	Using technology improves the quality of my teaching.	0.779
External Self-Concept (ESC)	ESC1	I use technology in teaching under the expectations of my friends and colleagues.	0.765
	ESC2	When I use technology in teaching, I often consult other people for help to choose the best alternative available.	0.912
	ESC3	I achieve a sense of belonging with my friends and colleagues by using technology in teaching.	0.880
	ESC4	When I use technology in teaching I ask my friends for useful information.	0.870
Ease of Use (EOU)	ESC5	When I use technology in teaching, I frequently gather information from friends or colleagues.	0.779
	EOU1	My interaction with technology is easy and understandable.	0.867

	EOU2	It is easy for me to become skillful at using technology.	0.887
	EOU3	Overall, I believe that technology is easy to use.	0.872
Behavioural Intention (BI)	BI1	I intend to increase the use of technology in the future	0.882
	BI2	I will frequently use technology in my teaching	0.912
Total explained variance = 78.66%; KMO measure = 0.822; Bartlett's Test of Sphericity (p<0.000).			

Notes: N=320

**Mean score of variables and reliability analysis**

As shown in Table 3, the values of cronbach's alpha corresponding to all constructs were exceeding thresholds 0.70 which validates the reliability of variables. The mean score of internal self-efficacy was 3.88, which implied that teachers at Polytechnics are highly influence by self-efficacy attributes. The mean score of value beliefs was found 3.77. In addition, mean score of external self-concept, ease of use and behavioural intention was found 3.32, 3.93, and 3.66, respectively.

**Table 3:** Mean and reliability of constructs

Variables	Mean	SD	Cronbach's alpha
Internal Self-Efficacy (ISE)	3.88	1.22	0.813
Value Beliefs (VB)	3.77	0.98	0.823
External Self-Concept (ESC)	3.32	0.88	0.892
Ease of Use (EOU)	3.93	1.02	0.912
Behavioural Intention (BI)	3.66	1.22	0.728

**Multi-regression results**

As shown in Table 4, correlations between variables were found significant at different level of significance. Table 5

**Table 5:** regression results

Variable	Unstandardized coefficients	Standard Error	t-value	Standardized coefficients
Constant	0.876	0.118	7.443***	-
ISE	0.456	0.070	6.532***	0.553
VB	0.398	0.060	6.667***	0.443
ESC	0.038	0.038	1.008	0.054
EOU	0.384	0.096	3.986**	0.432

Notes: Dependent variable = BI. \*, \*\*, and \*\*\* coefficient is significant at 0.05, 0.01 and 0.001, respectively.

**Conclusion**

This study aims was to assess the teachers' motivation to adopt the technology as teaching method. Using the sample of 320 teachers at Polytechnics, our finding provided that internal self-efficacy, value beliefs, ease of use technology positively influence the future behavioural intention to use information and communication technology in teaching. Therefore, our findings are consistent with results of Ibrahim *et al.* (2018) [9] and Sharma and Srivastava (2019) [15]. Moreover, we found that internal self-efficacy of teachers as most influencer predictor of future intention to use technology followed by value beliefs, and ease of use. However, external self-concept is not significant predictor of behavioural intention to use technology. Further, we propose that use of technology in teaching area will be a key point during and post COVID-19 pandemic. The findings of this study facilitate to implementation the ICT in classroom teaching specifically at technical education. Therefore, our findings suggest that internal self-efficacy, value beliefs, ease of use technology are important factors which motivates the teachers. However, the decision makers should consider these aspects before implementation of ICT in technical education in long run.

shows the regression results. The constant-coefficient is found positive and significant, which shows intention to use technology in teaching will be positive in the absence of independent variables. Further, the coefficient of internal self-efficacy was found positive and significant that implies teachers' internal self-efficacy is positively influence the future behavioural intention to use technology as teaching tool. In addition, value beliefs and ease of use dimensions positive and significant influence of behavioural intentions to use ICT in teaching. However, external self-concept of teachers has not significant influence on future behavioural intentions to use technology in teaching.

**Table 4:** Correlation matrix between variables

	ISE	VB	ESC	EOU	BI
ISE	1				
VB	0.453**	1			
ESC	0.454**	0.334**	1		
EOU	0.334*	0.227*	0.218*	1	
BI	0.586***	0.533***	0.411**	0.532**	1

Notes: \*, \*\*, \*\*\* correlation is significant at 0.05, 0.01 and 0.001, respectively.

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